### **CASE STUDY**

# **CRIME TABLE**

	CrimeID	IncidentType	IncidentDate	Location	Description	Status
<b>•</b>	1	Robbery	2023-09-15	123 Main St, Cityville	Armed robbery at a convenience store	Open
	2	Homicide	2023-09-20	456 Elm St, Townsville	Investigation into a murder case	Under Investigation
	3	Theft	2023-09-10	789 Oak St, Villagetown	Shoplifting incident at a mall	Closed
	4	Assault	2024-04-10	101 Park Ave, Downtown	Assault incident in a nightclub	Open
	5	Burglary	2024-04-12	222 Pine St, Suburbia	Residential burglary reported	Closed
	6	Vandalism	2024-04-14	333 Maple St, Uptown	Property damage to public park	Open
	7	Fraud	2024-04-16	444 Cedar St, Countryside	Identity theft case under investigation	Under Investigation
	8	Drug Possession	2024-04-18	555 Walnut St, Metropolis	Drug possession arrest made	Closed
	9	Assault	2024-04-20	666 Oak St, Riverside	Assault reported at a bar	Open
	10	Robbery	2024-04-22	777 Birch St, Hillside	Robbery at a convenience store	Open
	11	Homicide	2024-04-24	888 Cherry St, Lakeside	Investigation into a murder case	Under Investigation
	12	Theft	2024-04-26	999 Elm St, Mountainside	Shoplifting incident at a retail store	Closed
	13	Fraud	2024-04-28	111 Ash St, Seaside	Credit card fraud investigation	Under Investigation
	NULL	NULL	NULL	HULL	NULL	NULL

# **VICTIM TABLE**

VictimID	CrimeID	Name	ContactInfo	Injuries	Age
1	1	John Doe	johndoe@example.com	Minor injuries	40
2	2	Jane Smith	janesmith@example.com	Deceased	37
3	3	Alice Johnson	alicejohnson@example.com	None	49
4	4	Michael Johnson	michaeljohnson@example.com	Moderate injuries	51
5	5	Sarah Lee	sarahlee@example.com	None	27
6	6	David Brown	davidbrown@example.com	Property damage	29
7	7	Emily Davis	emilydavis@example.com	Financial loss	45
8	8	Michael Smith	michaelsmith@example.com	None	58
9	9	Emma Wilson	emmawilson@example.com	Minor injuries	76
10	10	James Taylor	jamestaylor@example.com	None	64
11	11	Olivia Martinez	oliviamartinez@example.com	Deceased	75
12	12	Ethan Anderson	ethananderson@example.com	None	40
13	13	Sophia Hernandez	sophiahernandez@example.com	Financial loss	19
HULL	NULL	NULL	HULL	NULL	NULL

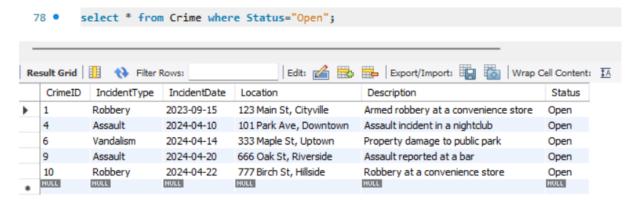
## **SUSPECT TABLE**

SuspectID	CrimeID	Name	Description	CriminalHistory	SAge
1	1	Robber 1	Armed and masked robber	Previous robbery convictions	78
2	2	Unknown	Investigation ongoing	HULL	73
3	3	Suspect 1	Shoplifting suspect	Prior shoplifting arrests	50
4	4	Assailant 1	Physical altercation suspect	Previous assault charges	75
5	5	Burglar 1	Suspected burglar	Prior burglary convictions	24
6	6	Vandalizer 1	Vandalism suspect	History of vandalism	63
7	7	Fraudster 1	Identity theft suspect	Prior fraud arrests	42
8	8	Drug Dealer 1	Suspected drug dealer	Drug trafficking charges	63
9	9	Assailant 2	Assault suspect	Previous assault charges	49
10	10	Robber 2	Suspected robber	Prior robbery convictions	40
11	11	Unknown	Investigation ongoing	NULL	37
12	12	Shoplifter 1	Suspected shoplifter	History of shoplifting	46
13	13	Fraudster 2	Credit card fraud suspect	Prior fraud arrests	42
HULL	NULL	NULL	HULL	NULL	NULL

#### **TASKS:**

1. Select all open incidents.

select \* from Crime where Status="Open";



2. Find the total number of incidents.

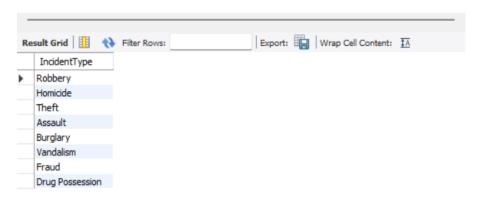
select count(IncidentType) as Total from Crime;



3. List all unique incident types.

select IncidentType from Crime group by IncidentType;

80 • select IncidentType from Crime group by IncidentType;



4. Retrieve incidents that occurred between '2023-09-01' and '2023-09-10'.

select CrimeId, IncidentType, IncidentDate from Crime where IncidentDate between '2023-09-01' and '2023-09-10'



5. List persons involved in incidents in descending order of age. select VictimId,CrimeID,NAme,Age from Victim order by Age desc;

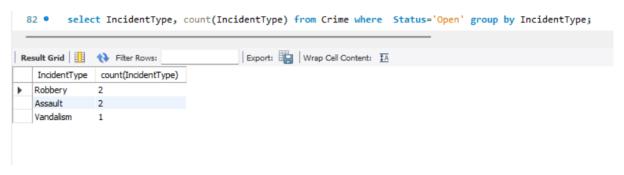
VictimId	CrimeID	NAme	Age
9	9	Emma Wilson	76
11	11	Olivia Martinez	75
10	10	James Taylor	64
8	8	Michael Smith	58
4	4	Michael Johnson	51
3	3	Alice Johnson	49
7	7	Emily Davis	45
1 1		John Doe	40
12	12	Ethan Anderson	40
2	2	Jane Smith	37
6	6	David Brown	29
5 5		Sarah Lee	27
13	13	Sophia Hernandez	19

6. Find the average age of persons involved in incidents. select round(avg(Age)) as Average\_Age from Victim;



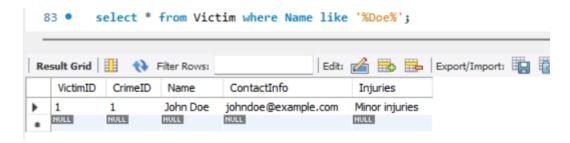
7. List incident types and their counts, only for open cases.

select IncidentType, count(IncidentType) from Crime where Status='Open' group by IncidentType;



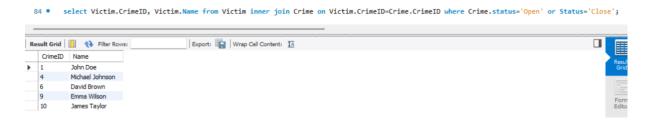
8. Find persons with names containing 'Doe'.

Select \* from Victim where Name like '%Doe%';



9. Retrieve the names of persons involved in open cases and closed cases.

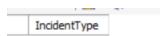
select Victim.CrimeID, Victim.Name from Victim inner join Crime on Victim.CrimeID=Crime.CrimeID where Crime.status='Open' or Status='Close';



10. List incident types where there are persons aged 30 or 35 involved.

select c.IncidentType FROM Crime c join (SELECT CrimeID FROM Victim WHERE Age IN (30, 35) UNION

SELECT CrimeID FROM Suspect WHERE SAge IN (30, 35)) AS incident\_ids ON c.CrimeID = incident\_ids.CrimeID;



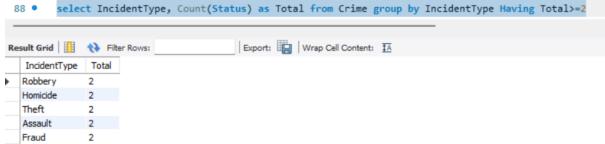
11. Find persons involved in incidents of the same type as 'Robbery'.

select Victim.Name , Crime.IncidentType from Victim Join Crime on Victim.CrimeID=Crime.CrimeID where IncidentType='Robbery';

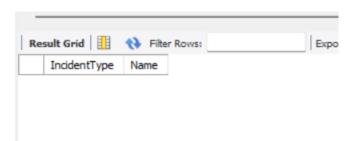


12. List incident types with more than one open case.

select IncidentType, Count(Status) as Total from Crime group by IncidentType Having Total>=2



13. List all incidents with suspects whose names also appear as victims in other incidents. select c.IncidentType, s.Name from Crime c JOIN Suspect s ON c.CrimeID = s.CrimeID JOIN Victim v ON s.Name = v.Name;



14. Retrieve all incidents along with victim and suspect details.

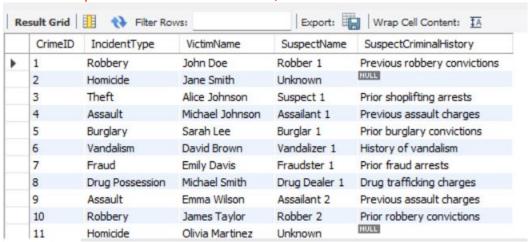
SELECT c.CrimeID,c.IncidentType, v.Name AS VictimName,

s.Name AS SuspectName, s.CriminalHistory AS SuspectCriminalHistory

FROM Crime c

LEFT JOIN Victim v ON c.CrimeID = v.CrimeID

LEFT JOIN Suspect s ON c.CrimeID = s.CrimeID;



15. Find incidents where the suspect is older than any victim. select c.CrimeID, v.Age, s.SAge from Crime c join Victim v on c.CrimeID=v.CrimeID join Suspect s on v.crimeID=s.CrimeID where Sage>age;

	CrimeID	Age	SAge
•	1	40	78
	2	37	73
	3	49	50
	4	51	75
	6	29	63
	8	58	63
	12	40	46
	13	19	42

16. Find suspects involved in multiple incidents:

select s.SuspectID, s.Name, c.CrimeID, c.IncidentType from Crime c join Suspect s on C.CrimeID=S.CrimeID;

	SuspectID	Name	CrimeID	IncidentType
•	1	Robber 1	1	Robbery
	2	Unknown	2	Homicide
	3	Suspect 1	3	Theft
	4	Assailant 1	4	Assault
	5	Burglar 1	5	Burglary
	6	Vandalizer 1	6	Vandalism
	7	Fraudster 1	7	Fraud
	8	Drug Dealer 1	8	Drug Possession
	9	Assailant 2	9	Assault
	10	Robber 2	10	Robbery
	11	Unknown	11	Homicide
	13	Charliffers 4	12	TL-A

17. List incidents with no suspects involved.

SELECT c.\* FROM Crime c LEFT JOIN Suspect s ON c.CrimeID = s.CrimeID WHERE s.CrimeID IS NULL;

CrimeID	IncidentType	IncidentDate	Location	Description	Status

18. List all cases where at least one incident is of type 'Homicide' and all other incidents are of type 'Robbery'.

SELECT c.CrimeID FROM ( SELECT CrimeID, COUNT(DISTINCT IncidentType) AS num\_types

FROM Crime GROUP BY CrimeID ) AS case\_counts

JOIN Crime AS c ON case\_counts.CrimeID = c.CrimeID

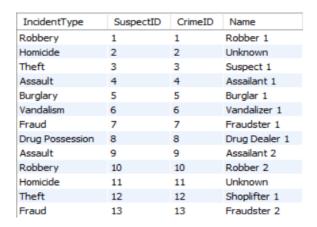
### WHERE num\_types = 2 AND c.IncidentType IN ('Homicide', 'Robbery') GROUP BY c.CrimeID

HAVING COUNT(DISTINCT c.IncidentType) = 2;



19. Retrieve a list of all incidents and the associated suspects, showing suspects for each incident, or 'No Suspect' if there are none.

select c.IncidentType , s.SuspectID,s.CrimeID,s.Name from Crime c Join Suspect s on c.CrimeID=s.CrimeID;



20. List all suspects who have been involved in incidents with incident types 'Robbery' or 'Assault' select s.\* from Suspect s join Crime c on s.CrimeID=c.CrimeID where IncidentType = 'Robbery' or IncidentType = 'Assault';

